

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant : Hill et al.  
Appl. No. : 10/758,774  
Filed : January 16, 2004  
For : DISPOSABLE CLEANING  
SUBSTRATE  
Examiner : Norca L. Torres-Velazquez  
Group Art Unit: 1771

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September 19, 2006

(Date)

**SUBMISSION OF AMENDMENT WITH FILING OF RCE**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

This submission is made concurrently with the filing of an RCE in the captioned application.

In response to the Office Action mailed June 19, 2006 in the above-captioned application, Applicants respectfully request reconsideration of the rejections in view of the amendments and remarks below.

Amendment to the Claims begin on Page 2 of this paper.

Remarks begin on Page 11 of this paper.

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**CLAIM AMENDMENTS:**

WE CLAIM:

1. (Currently Amended) A disposable cleaning substrate comprising:
  - a. 57-80% cellulosic fibers, wherein said cellulosic fibers are present throughout said substrate and wherein said cellulosic fibers vary from less than about 25% on one side of said substrate to greater than about 75% on the other side of said substrate, and
  - b. 8-21% higher denier thermoplastic fibers of about 2 to 6 denier, wherein said thermoplastic fibers are concentrated on the side of said substrate having lower cellulosic content,
  - c. 9-11% thermal bonding bicomponent fibers; and
  - d. 3-11% latex binder;
  - e. wherein said substrate has a coefficient of static friction greater than 0.600 ~~and less than 0.900, and~~
  - f. wherein said substrate has a coefficient of kinetic friction greater than 0.400 ~~and less than 0.800; and~~
  - g. wherein said substrate does not comprise nodulated abrasive fiber remnants.
2. (Cancelled)
3. (Cancelled)
4. (Currently Amended) The substrate of claim 3 1, wherein said binder has a Tg greater than 0° C.
5. (Currently Amended) The substrate of claim 3 1, wherein said binder has a Tg greater than 20° C.
6. (Currently Amended) The substrate of claim 3 1, wherein said binder has a Tg greater than 30° C.
7. (Original) The substrate of claim 1, wherein said substrate is a wet wipe.
8. (Original) The substrate of claim 1, wherein said substrate is a dry wipe.
9. (Original) The substrate of claim 1, wherein said substrate further comprises surfactants in a cleaning effective amount.

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10. (Original) The substrate of claim 1, wherein said substrate further comprises surfactants in a cleaning effective amount and is dry-to-the-touch.
11. (Original) The substrate of claim 1, wherein said substrate is attached to a cleaning device or implement.
12. (Original) The substrate of claim 11, wherein said substrate further comprises surfactants in a cleaning effective amount.
13. (Original) The substrate of claim 11, wherein said substrate is attached to a cleaning device comprising a floor mop.
14. (Original) The substrate of claim 11, wherein said substrate is attached to a cleaning device selected from a group consisting of a toilet cleaning device, a bathroom cleaning device, and a shower cleaning device.
15. (Original) The substrate of claim 1, wherein said substrate is part of a mitt or glove.
16. (Original) The substrate of claim 15, wherein said substrate further comprises surfactants in a cleaning effective amount.
17. (Original) The substrate of claim 1, wherein said substrate is of unitized, airlaid construction.
18. (Original) The substrate of claim 1, wherein said cellulosic fibers comprise at least about 5% of the side of said substrate having lower cellulosic content.
19. (Original) The substrate of claim 1, wherein said thermoplastic fibers comprise less than about 30% of said total cleaning substrate.
20. (Original) The substrate of claim 1, wherein said substrate has a bulk density of less than about 0.10 g/cc.
21. (Original) The substrate of claim 20, wherein said substrate has a thickness greater than about 2 mm.
22. (Original) The substrate of claim 20, wherein said substrate has a thickness greater than about 3 mm.
23. (Original) The substrate of claim 20, wherein said substrate has a thickness greater than about 4 mm.
24. (Cancelled)
25. (Cancelled)

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26. (Previously Presented) The substrate of claim 1, wherein said substrate has a ratio of the coefficient of static friction to coefficient of kinetic of greater than about 1.5.
27. (Original) The substrate of claim 20, wherein said substrate has a MD tensile greater than about 500.
28. (Original) The substrate of claim 20, wherein said substrate has a MD tensile greater than about 700.
29. (Original) The substrate of claim 20, wherein said substrate has a CD tensile greater than about 400.
30. (Original) The substrate of claim 1, wherein said substrate has a bulk density of less than about 0.08 g/cc.
31. (Original) The substrate of claim 1, wherein said substrate has a bulk density of less than about 0.06 g/cc.
32. (Original) The substrate of claim 1, wherein said substrate has a total absorbency greater than about 8 g/g.
33. (Original) The substrate of claim 1, wherein said substrate has a total absorbency greater than about 10 g/g.
34. (Original) The substrate of claim 1, wherein said substrate has a total absorbency greater than about 15 g/g.
35. (Original) The substrate of claim 1, wherein said substrate has an absorbency rate change over 5 doses of less than about 2.5 times.
36. (Original) The substrate of claim 1, wherein said substrate has an absorbency rate change over 5 doses of less than about 2.0 times.
37. (Original) The substrate of claim 1, wherein said substrate has an absorbency rate change over 5 doses of less than about 1.5 times.
38. (Original) The substrate of claim 1, wherein said substrate further comprises superabsorbent materials.
39. (Original) The substrate of claim 38, wherein said superabsorbent materials are limited to a specific area of the substrate.
40. (Original) The substrate of claim 38, wherein said superabsorbent materials are distributed across the cleaning substrate.
41. (Currently Amended) A disposable cleaning substrate comprising:

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- a. cellulosic fibers, wherein said cellulosic fibers are present throughout said substrate and wherein said cellulosic fibers vary from less than about 25% on one side of said substrate to greater than about 75% on the other side of said substrate; and
  - b. higher denier thermoplastic fibers of about 2 to 6 denier, wherein said thermoplastic fibers are concentrated on the side of said substrate having lower cellulosic content;
  - c. thermal bonding fibers selected from the group consisting of bicomponent fibers, multicomponent fibers and combinations thereof; and
  - d. a binder;
  - e. wherein said substrate has a ratio of the coefficient of static friction to coefficient of kinetic of greater than about 1.5.
42. (Original) The substrate of claim 41, wherein said binder comprises binders selected from a group consisting of liquid emulsions, latex binders, liquid adhesives, chemical bonding agents, and mixtures thereof.
43. (Currently Amended) The substrate of claim 41, wherein said thermal bonding fibers comprise from about 1 to about 20% of said substrate.
44. (Currently Amended) The substrate of claim 41, wherein said thermal bonding fibers comprise from about 5 to about 15% of said substrate.
45. (Original) The substrate of claim 42, wherein said binder is a latex binder.
46. (Original) The substrate of claim 45, wherein said binder has a Tg greater than 0° C.
47. (Original) The substrate of claim 45, wherein said binder has a Tg greater than 20° C.
48. (Original) The substrate of claim 45, wherein said binder has a Tg greater than 30° C.
49. (Original) The substrate of claim 41, wherein said substrate is a wet wipe.
50. (Original) The substrate of claim 41, wherein said substrate is a dry wipe.
51. (Original) The substrate of claim 41, wherein said substrate further comprises surfactants in a cleaning effective amount.
52. (Original) The substrate of claim 41, wherein said substrate further comprises surfactants in a cleaning effective amount and is dry-to-the-touch.
53. (Original) The substrate of claim 41, wherein said substrate is attached to a cleaning device.
54. (Original) The substrate of claim 53, wherein said substrate further comprises surfactants in a cleaning effective amount.

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55. (Original) The substrate of claim 53, wherein said substrate is attached to a cleaning device comprising a floor mop.
56. (Original) The substrate of claim 53, wherein said substrate is attached to a cleaning device selected from a group consisting of a toilet cleaning device, a bathroom cleaning device, and a shower cleaning device.
57. (Original) The substrate of claim 41, wherein said substrate is part of a mitt or glove.
58. (Original) The substrate of claim 57, wherein said substrate further comprises surfactants in a cleaning effective amount.
59. (Original) The substrate of claim 41, wherein said substrate is of unitized, airlaid construction.
60. (Original) The substrate of claim 41, wherein said cellulosic fibers comprise at least about 5% of the side of said substrate having lower cellulosic content.
61. (Original) The substrate of claim 41, wherein said thermoplastic fibers comprise less than about 30% of said total cleaning substrate.
62. (Original) The substrate of claim 41, wherein said substrate has a bulk density of less than about 0.10 g/cc.
63. (Original) The substrate of claim 62, wherein said substrate has a thickness greater than about 2 mm.
64. (Original) The substrate of claim 62, wherein said substrate has a thickness greater than about 3 mm.
65. (Original) The substrate of claim 62, wherein said substrate has a thickness greater than about 4 mm.
66. (Original) The substrate of claim 62, wherein said substrate has a coefficient of static friction greater than 0.600.
67. (Original) The substrate of claim 62, wherein said substrate has a coefficient of kinetic friction greater than 0.400.
68. (Cancelled)
69. (Original) The substrate of claim 62, wherein said substrate has a MD tensile greater than about 500.
70. (Original) The substrate of claim 62, wherein said substrate has a MD tensile greater than about 700.

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71. (Original) The substrate of claim 62, wherein said substrate has a CD tensile greater than about 400.
72. (Original) The substrate of claim 41, wherein said substrate has a bulk density of less than about 0.08 g/cc.
73. (Original) The substrate of claim 41, wherein said substrate has a bulk density of less than about 0.06 g/cc.
74. (Original) The substrate of claim 41, wherein said substrate has a total absorbency greater than about 8 g/g.
75. (Original) The substrate of claim 41, wherein said substrate has a total absorbency greater than about 10 g/g.
76. (Original) The substrate of claim 41, wherein said substrate has a total absorbency greater than about 15 g/g.
77. (Original) The substrate of claim 41, wherein said substrate has an absorbency rate change over 5 doses of less than about 2.5 times.
78. (Original) The substrate of claim 41, wherein said substrate has an absorbency rate change over 5 doses of less than about 2.0 times.
79. (Original) The substrate of claim 41, wherein said substrate has an absorbency rate change over 5 doses of less than about 1.5 times.
80. (Original) The substrate of claim 41, wherein said substrate further comprises superabsorbent materials.
81. (Original) The substrate of claim 80, wherein said superabsorbent materials are limited to a specific area of the substrate.
82. (Original) The substrate of claim 80, wherein said superabsorbent materials are distributed across the cleaning substrate.
83. (Currently Amended) A disposable cleaning substrate comprising:
  - a. 57-80% cellulosic fibers, wherein said cellulosic fibers vary from less than about 25% on one side of said substrate to greater than about 75% on the other side of said substrate; ~~and~~
  - b. 8-21% higher denier thermoplastic fibers of about 2 to 6 denier, wherein said thermoplastic fibers are concentrated on the side of said substrate having lower cellulosic content;

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- c. 9-11% thermal bonding fibers selected from the group consisting of bicomponent fibers, multicomponent fibers and combinations thereof, and
  - d. 3-11% binder selected from a group consisting of liquid emulsions, latex binders, liquid adhesives, chemical bonding agents, and mixtures thereof;
  - e. wherein said substrate has a coefficient of static friction greater than 0.600 and less than 0.900.
84. (Cancelled)
85. (Currently Amended) The substrate of claim 83, wherein said ~~multicomponent~~ thermal bonding fibers comprise from about 1 to about 20% of said substrate.
86. (Currently Amended) The substrate of claim 83, wherein said ~~multicomponent~~ thermal bonding fibers comprise from about 5 to about 15% of said substrate.
87. (Currently Amended) The substrate of claim ~~83~~ ~~84~~, wherein said binder is a latex binder.
88. (Original) The substrate of claim 87, wherein said binder has a Tg greater than 0° C.
89. (Original) The substrate of claim 87, wherein said binder has a Tg greater than 20° C.
90. (Original) The substrate of claim 87, wherein said binder has a Tg greater than 30° C.
91. (Original) The substrate of claim 83, wherein said substrate is a wet wipe.
92. (Original) The substrate of claim 83, wherein said substrate is a dry wipe.
93. (Original) The substrate of claim 83, wherein said substrate further comprises surfactants in a cleaning effective amount.
94. (Original) The substrate of claim 83, wherein said substrate further comprises surfactants in a cleaning effective amount and is dry-to-the-touch.
95. (Original) The substrate of claim 83, wherein said substrate is attached to a cleaning device.
96. (Original) The substrate of claim 95, wherein said substrate further comprises surfactants in a cleaning effective amount.
97. (Original) The substrate of claim 95, wherein said substrate is attached to a cleaning device comprising a floor mop.
98. (Original) The substrate of claim 95, wherein said substrate is attached to a cleaning device selected from a group consisting of a toilet cleaning device, a bathroom cleaning device, and a shower cleaning device.
99. (Original) The substrate of claim 83, wherein said substrate is part of a mitt or glove.



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100. (Original) The substrate of claim 99, wherein said substrate further comprises surfactants in a cleaning effective amount.
101. (Original) The substrate of claim 83, wherein said substrate is of unitized, airlaid construction.
102. (Original) The substrate of claim 83, wherein said cellulosic fibers comprise at least about 5% of the side of said substrate having lower cellulosic content.
103. (Original) The substrate of claim 83, wherein said thermoplastic fibers comprise less than about 30% of said total cleaning substrate.
104. (Original) The substrate of claim 83, wherein said substrate has a bulk density of less than about 0.10 g/cc.
105. (Original) The substrate of claim 104, wherein said substrate has a thickness greater than about 2 mm.
106. (Original) The substrate of claim 104, wherein said substrate has a thickness greater than about 3 mm.
107. (Original) The substrate of claim 104, wherein said substrate has a thickness greater than about 4 mm.
108. (Cancelled)
109. (Original) The substrate of claim 104, wherein said substrate has a coefficient of kinetic friction greater than 0.400.
110. (Original) The substrate of claim 104, wherein said substrate has a ratio of the coefficient of static friction to coefficient of kinetic of greater than about 1.5.
111. (Original) The substrate of claim 104, wherein said substrate has a MD tensile greater than about 500.
112. (Original) The substrate of claim 104, wherein said substrate has a MD tensile greater than about 700.
113. (Original) The substrate of claim 104, wherein said substrate has a C'D tensile greater than about 400.
114. (Original) The substrate of claim 83, wherein said substrate has a bulk density of less than about 0.08 g/cc.
115. (Original) The substrate of claim 83, wherein said substrate has a bulk density of less than about 0.06 g/cc.

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116. (Original) The substrate of claim 83, wherein said substrate has a total absorbency greater than about 8 g/g.
117. (Original) The substrate of claim 83, wherein said substrate has a total absorbency greater than about 10 g/g.
118. (Original) The substrate of claim 83, wherein said substrate has a total absorbency greater than about 15 g/g.
119. (Original) The substrate of claim 83, wherein said substrate has an absorbency rate change over 5 doses of less than about 2.5 times.
120. (Original) The substrate of claim 83, wherein said substrate has an absorbency rate change over 5 doses of less than about 2.0 times.
121. (Original) The substrate of claim 83, wherein said substrate has an absorbency rate change over 5 doses of less than about 1.5 times.
122. (Original) The substrate of claim 83, wherein said substrate further comprises superabsorbent materials.
123. (Original) The substrate of claim 122, wherein said superabsorbent materials are limited to a specific area of the substrate.
124. (Original) The substrate of claim 122, wherein said superabsorbent materials are distributed across the cleaning substrate.

## **REMARKS**

### **Amendments to the Claims and Specification**

Claims 1, 4-6, 41, 43-44, 83, and 85-7 have been amended.

Claims 24, 25, 68, and 108 have been cancelled.

Applicants respectfully submit that the amendments add no new matter and are fully supported by the application as originally filed.

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**Rejections under 35 U.S.C. §112**

The Examiner has rejected Claims 1-40 and 83-124 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The Examiner maintains that there is not sufficient support for the requirements of coefficient of static friction of less than 0.900 and the coefficient of kinetic friction of less than 0.800. Claims 1 and 83 have been amended to remove these limitations.

The Examiner has rejected Claims 1-23, 26-67, 69-107 and 109-124 under 35 U.S.C. §112, first paragraph, as based on a disclosure that is not enabling. The Examiner maintains that a binder is critical to the practice of the invention. Claims 1, 41, and 83 have been amended to include the limitation of a binder.

The Examiner has rejected Claims 2-6, 42-48 and 84-90 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention, because of insufficient antecedent basis. Claims 1, 41, and 83, upon which these claims depend, have been amended to include the limitation of a binder.

**Rejections under 35 U.S.C. §102**

8. The Examiner has rejected Claims 1-2, 7-19, 32-37, 41-44, 49-61, 74-79, 83-86, 91-103 and 114-121 under 35 U.S.C. §102(b) as being anticipated by Hayase et al. (US 2002/0106478). Claims 2 and 84 have been cancelled. Claims 1, 41, and 83 have been amended to require cellulosic fibers, thicker thermoplastic fibers of 2 to 6 denier, thermal bonding bicomponent fibers, and binder.

Hayase discloses a cleaning sheet comprising cellulosic fibers, thermoplastic fibers of 9 to 140 denier, heat-fusible fibers of 0.5 to 5 dtex (0.45 to 4.5 denier), and binder. Hayase does not disclose both the combination of thicker thermoplastic fibers of 2 to 6 denier and thermal bonding bicomponent fibers.

Therefore, Hayase does not anticipate Claims 1, 41, and 83. Claims 2, 7-19, and 32-37 are dependent on Claim 1. Therefore, Hayase does not anticipate Claims 2, 7-19, and 32-37.

Accordingly, the objection to Claims 1, 7-19, 32-37, 41-44, 49-61, 74-79, 83, 85-86, 91-103 and 114-121 is overcome and it is respectfully urged that it be withdrawn.

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8. The Examiner has rejected Claims 1-2, 7-8, 11, 13-15, 18-19, 26-29, 32-37, 41-44, 49-50, 52-53, 55-57, 60-61, 74-79, 83-86, 91-92, 94-95, 97-99, 102-103 and 116-121 under 35 U.S.C. §102(b) as being anticipated by Annis et al. (WO 97/21865). Claims 2 and 84 have been cancelled.

Claim 1 has been amended to include the requirement of 3-11% latex binder. Annis does not disclose latex binders specifically, but does disclose wet strength agents, and, in particular, a water soluble resin in amounts well less than 2% by weight. (pg 11, lines 6-18 of Annis)

Claim 1 has been amended to include the requirement of a substrate that does not comprise nodulated abrasive fiber remnants. Annis requires nodulated abrasive fiber remnants to give the substrate an abrasive quality. Claims 7-8, 11, 13-15, 18-19, 26-29 and 32-37 are dependent on Claim 1.

Claim 41 requires that the ratio of the coefficient of static friction to the coefficient of kinetic of greater than about 1.5. Annis discloses substrates with a ratio of 1.16, 1.17 and 1.12 (pg 18, Table III of Annis). Claims 42-44, 49-50, 52-53, 55-57, 60-61, and 74-79 are dependent on Claim 41.

Claim 83 has been amended to include the requirement of 3-11% binder. Annis does not disclose binders specifically, but does disclose wet strength agents, and, in particular, a water soluble resin in amounts well less than 2% by weight. (pg 11, lines 6-18 of Annis) Claims 85-86, 91-92, 94-95, 97-99, 102-103, and 116-121 are dependent on Claim 83.

Accordingly, the objection to Claims 1, 7-8, 11, 13-15, 18-19, 24-29, 32-37, 41-44, 49-50, 52-53, 55-57, 60-61, 74-79, 83, 85-86, 91-92, 94-95, 97-99, 102-103 and 116-121 is overcome and it is respectfully urged that it be withdrawn.

#### **Rejections under 35 U.S.C. §102(b)/103(a)**

The Examiner has rejected Claims 32-37, 74-79, and 114-121 under 35 U.S.C. §102(b) as being anticipated by, or in the alternative, under 35 U.S.C. §103(a) as obvious over Hayase et al. (US 2002/0106478). Claims 32-37 are dependent on amended Claim 1. Claims 74-79 are dependent on amended Claim 41. Claims 114-121 are dependent on amended Claim 83.

Accordingly, the objection to Claims 32-37, 74-79, and 114-121 is overcome and it is respectfully urged that it be withdrawn.

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**Rejections under 35 U.S.C. §103(a)**

The Examiner has rejected Claims 3-6, 45-48, 87-90 under 35 U.S.C. §103(a) as being unpatentable over Hayase et al. (US 2002/0106478) in view of Trapasso et al. (US 4,172,173). Claim 3 has been cancelled.

Amended Claims 1, 41, and 83 are unobvious over Hayase as reasoned above. Since Claims 3-6, 45-48, 87-90 are dependent upon Claims 1, 41, and 83, Claims 3-6, 45-48, 87-90 are unobvious over Hayase et al. (US 2002/0106478) in view of Trapasso et al. (US 4,172,173).

Accordingly, the objection to Claims 4-6, 45-48, 87-90 is overcome and it is respectfully urged that it be withdrawn.

The Examiner has rejected Claims 20-31, 62-73, 104-107, and 109-112 under 35 U.S.C. §103(a) as being unpatentable over Hayase et al. (US 2002/0106478) in view of Adams et al. (US 5,811,178).

Amended Claims 1, 41, and 83 are unobvious over Hayase as reasoned above. Since Claims 20-31, 62-73, 104-107, and 109-112 are dependent upon Claims 1, 41, and 83, Claims 20-31, 62-73, 104-107, and 109-112 are unobvious over Hayase et al. (US 2002/0106478) in view of Adams et al. (US 5,811,178).

Accordingly, the objection to Claims 20-31, 62-73, 104-107, and 109-112 is overcome and it is respectfully urged that it be withdrawn.

The Examiner has rejected Claims 38-40, 80-82, and 122-124 under 35 U.S.C. §103(a) as being unpatentable over Hayase et al. (US 2002/0106478) in view of Kilkenny et al. (US 2003/0100465).

Amended Claims 1, 41, and 83 are unobvious over Hayase as reasoned above. Since Claims 38-40, 80-82, and 122-124 are dependent upon Claims 1, 41, and 83, Claims 38-40, 80-82, and 122-124 are unobvious over Hayase et al. (US 2002/0106478) in view of Kilkenny et al. (US 2003/0100465).

Accordingly, the objection to Claims 38-40, 80-82, and 122-124 is overcome and it is respectfully urged that it be withdrawn.

**CONCLUSIONS**

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In view of the foregoing amendments and remarks, Applicants submit that the application is in condition for allowance. If, however, some issue remains which the Examiner feels may be addressed by Examiner's amendment, the Examiner is cordially invited to call the undersigned for authorization.

Please charge any additional fees, including fees for additional extensions of time, or credit overpayment to Deposit Account No. 03 2270.

Respectfully submitted,  
The Clorox Company  
**Customer No. 27019**

Dated: September 19, 2006

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